(19) Japan Patent Office (JP)

(12) Published Patent Gazette (A)

(11) Publication Number: H09-305155

(43) Date of Publication: Nov. 28, 1997

(51) Int. Cl.	Identification Codes	JPO Ref. No	F I	Invention Indicated
G09G 5/00	550		G09G 5/00	550B
G06F 3/14	340		G06F 3/14	340Z

Examination Not Requested, 5 Claims, (Total of 5 Pages)

(21) Application Number: H08-117678

(22) Application Date: May. 13, 1996

(71) *Applicant* -- 000005108
Hitachi, Ltd.
4-6 Surugadai Kanda Chiyoda-ku
Tokyo
(72) *Inventor*-- Osamu Yamamoto
Hitachi, Ltd. Office System Division
810 Shimoimaizumi Ebina-shi
Kanagawa Prefecture
(72) *Inventor* --Kenichi Nagashima
Hitachi, Ltd. Office System Division
810 Shimoimaizumi Ebina-shi
Kanagawa Prefecture
(74) *Agent* -- Makoto Suzuki

(54) **[Name of Invention]** Information Security Method

(57) **[Abstract]**

[Objective] An object is to determine whether or not a screen saver is switched back against a user's intention.

[Means for Problem Solving] When no input is detected from an input device within the designated time of a screen saver (Step 102), a screen of a display 15 is turned into a screen saver screen (Step 103). When input is detected from an input device after the activation of a screen saver (Step 104), a screen saver screen on a display 15 is switched back to an original screen, one is added to a counter 16, and the switch back time timed with a timer 17 is stored in a storage device 18 (Step 105). A combining device 19 combines the frequency of switchback and an original screen (Step 106) to show the frequency of switchback on a display 15 (Step 107).

Eggleston Resubmitted Exhibit 1009
Lazaridis v. Eggleston
Interference No. 105,700

Eggleston Exhibit 1009
Lazaridis v. Eggleston
Interference No. 105,700

(19) Japan Patent Office (JP)

(12) Published Patent Gazette (A)

(11) Publication Number: H09-305155

(43) Date of Publication: Nov. 28, 1997

---

(51) Int. Cl.	Identification Codes	JPO Ref. No	F I	Invention Indicated
G09G 5/00	550		G09G 5/00	550B
G06F 3/14	340		G06F 3/14	340Z

Examination Not Requested, 5 Claims, (Total of 5 Pages)

---

(21) Application Number: H08-117678

(22) Application Date: May. 13, 1996

(71) *Applicant* -- 000005108
Hitachi, Ltd.
4-6 Surugadai Kanda Chiyoda-ku
Tokyo
(72) *Inventor*-- Osamu Yamamoto
Hitachi, Ltd. Office System Division
810 Shimoimaizumi Ebina-shi
Kanagawa Prefecture
(72) *Inventor* --Kenichi Nagashima
Hitachi, Ltd. Office System Division
810 Shimoimaizumi Ebina-shi
Kanagawa Prefecture
(74) *Agent* -- Makoto Suzuki

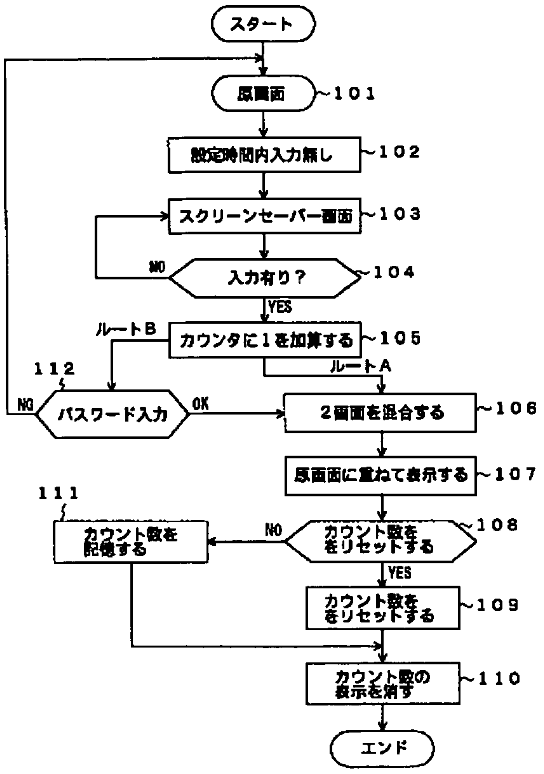
---

(54) **[Name of Invention]** Information Security Method

(57) **[Abstract]**

[Objective] An object is to determine whether or not a screen saver is switched back against a user's intention.

[Means for Problem Solving] When no input is detected from an input device within the designated time of a screen saver (Step 102), a screen of a display 15 is turned into a screen saver screen (Step 103). When input is detected from an input device after the activation of a screen saver (Step 104), a screen saver screen on a display 15 is switched back to an original screen, one is added to a counter 16, and the switch back time timed with a timer 17 is stored in a storage device 18 (Step 105). A combining device 19 combines the frequency of switchback and an original screen (Step 106) to show the frequency of switchback on a display 15 (Step 107).


スタート
原画面
101
設定時間内入力無し
102
スクリーンセーバー画面
103
入力有り？
104
NO
YES
ルートB
カウンタに1を加算する
105
ルートA
112
NO
パスワード入力
OK
2画面を混合する
106
原画面に重ねて表示する
107
111
カウント数を記憶する
NO
カウント数をリセットする
108
YES
カウント数をリセットする
109
カウント数の表示を消す
110
エンド

[Please see FIG. 1 for translation.]

What is claimed is:

[Claim 1] An information security method comprising: a screen saver function to hide an original screen shown on a display, wherein a display screen of said display is a screen saver; input signal is detected from an input device; said screen saver screen switches back to said original screen in response to said detection; the frequency of said switchback is counted; and improper switch back to an original screen is determined.

[Claim 2] An information security method of claim 1, wherein said frequency of switchback and the original screen are displayed overlapping each other.

[Claim 3] The information security method of claim 2, wherein said frequency of switchback and the original screen are displayed overlapping each other when a correct password is entered.

[Claim 4] The information security method of claim 1, wherein an operator is pictured and stored at the time of activation of said original screen, and the footage of the operator and the original screen are displayed overlapping each other.

[Claim 5] The information security method of claim 4, wherein the pictured time of said operator is stored, the pictured time, the picture of the operator, and the original screen are displayed overlapping each other.

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to information security technology of an information processing apparatus. More specifically, the invention relates to a method of information security for an information processing apparatus having a screen saver function to hide an original screen shown on a display.

[0002]

[Description of the Background Art] Conventionally, a screen saver is used as a means to prevent screen burn of an information processing apparatus, especially personal computers (henceforth PC). A screen saver prevents screen burn by turning a data screen being displayed into a screen saver screen and is also capable of hiding an original screen. For this reason, a screen saver can also be used as means to protect data.

[0003] The activation of a screen saver is briefly explained. A screen saver is activated when there are no input signals including a pointing device such as a mouse and a trackball or a keyboard etc. within the designated time of a screen saver. After the activation, an original screen is switched back due to input signals from a pointing device and a keyboard etc. Therefore, a screen saver is capable of both preventing screen burn and hiding an original screen which are widely used for PCs.

[0004]

[Problem to be Solved by the Invention] However, in the aforementioned background art, there were problems concerning reliability when a screen saver is used as means to hide the original screen. The problems are as follows:

(1) Vibration of a desk etc. may prompt a mouse to move which may switch a screen saver back to an original screen against a user's intention. So, the original screen may be seen by a person other than a user; and

(2) When a user becomes absent while a screen saver is activated, it is impossible to know whether the original screen was seen by a person other than the user when a screen saver is switched back during the absence of a user.

[0005] Recently, even though the importance of information security related functions for information processing apparatuses continues to increase, data protection of a screen being displayed is expected to be achieved with easy operation rather than shutting down the power in an attempt to secure protection of said original screen.

[0006] An object of the present invention is to provide an information security method that can determine whether or not a screen saver is switched back to an original screen against a user's intention.

[0007] Another object of this invention is to provide an information security method by capturing an image of a person who switched back a screen saver so that a user can determine by whom a screen saver was switched back to an original screen.

[0008]

[Means for Solving the Problem] In order to achieve said objectives, according to the present invention in claim 1, an information security method comprising: a screen saver function to hide an original screen shown in a display, wherein a display screen of said display is a screen saver; input signal is detected from an input device; said screen saver screen switch back to said original screen in response to said detection; frequency of said switchback is counted; and improper switch to an original screen is determined.

[0009] The present invention according to claim 2 features to display said frequency of switchback and an original screen on top of each other.

[0010] The present invention according to claim 3 features to display said frequency of switchback and an original screen on top of each other when a correct password is entered.

[0011] The present invention according to claim 4 features in picturing an operator at the time said original screen is brought back, and it is stored to display the operator's footage and an original screen on top of each other.

[0012] The present invention according to claim 5 features in storing the time said operator was pictured, and displaying the operator's footage and an original screen on top of each other.

[0013]

[Embodiment of the Invention] Hereafter, one embodiment of the present invention is described in detail using drawings. FIG. 3 shows a configuration of the embodiment in the present invention. In FIG. 3, an information processing device 10 is configured with a pointing device 11 such as a mouse or a trackball etc., a keyboard 12, a photographing device 13 which captures a picture of an operator who switched a screen saver back to an original screen, a restoration/regeneration device 14 which restores/reproduces the picture, a display 15, a counter 16 which counts the frequency of switchback of a screen saver, a timer 17 which stores timed switch back time of a screen saver and pictured time of a screen saver in a storage device, a storage device 18 which stores the frequency and time of switchback, a combining device 19 which combines the frequency of switchback, time, and a footage of a person who deactivated a screen saver, and a control device 20 which controls everything.

[0014] <Embodiment 1> This embodiment 1 is an embodiment that counts the frequency of switchback of a screen saver, and is described below with reference to the processing flow chart of FIG. 1. Route A in the flow chart of FIG. 1 is associated with the processing operation which counts the frequency of switchback of a screen saver in this embodiment 1.

[0015] First, when a display 15 is at the condition of an original screen (Step 101), as there are neither pointing device 11 nor keyboard 12 etc. detected from input device within the designated time of screen saver (Step 102), a control device 20 switches the screen of the display 15 to the screen of a screen saver (Step 103).

[0016] Then, if control device 20 detects that there is an input from the input device of the pointing device 11 or keyboard 12 etc. after the screen saver is activated (Step 104), it instructs the screen saver screen of the display 15 to switch back to an original screen. And, 1 is added to the counter 16 and the switch back time measured by the timer 17 is stored in the storage device 18 (Step 105). The combining device 19 combines the frequency of switchback of the counter 16 and the original screen (Step 106). The frequency of switchback are overlapped with the original screen and displayed on the display 15 (Step 107).

[0017] Next, when resetting the displayed frequency of switchback (Step 108 YES), reset the frequency of switchback (Step 109), and erase the frequency of switchback being displayed on the display 15 (Step 110). When the displayed frequency of switchback is not reset (Step 108 NO), the frequency of switchback is stored in the storage device 18 (Step 111), and the frequency of switchback being displayed on the display 15 is erased (Step 110).

[0018] Thus, in this embodiment 1, since the frequency of switchback of a screen saver is counted, when it switch backs against a user's intention it enables a determination of whether others saw or not (frequency of switchback).

[0019] <Embodiment 2> This embodiment 2 is an embodiment that displays the frequency of switchback of a screen saver by entering a password, and is described below with reference to the processing flow chart of FIG. 1. Route B in the flow chart of FIG. 1 is associated with the processing operation of this embodiment 2.

[0020] The processing up to Step 105 is the same as that of embodiment 1. In embodiment 2, it progresses from Step 105 to Step 112. In case the password entered is correct (Step 112 OK), it proceeds to Step 106 and undergoes a similar process as explained in embodiment 1. In case the password entered is incorrect (Step 112 NO), it switches back to Step 101.

[0021] Thus, in this embodiment 2, it enables a determination of whether others saw at the time of switch back of the screen saver against a user's intention and enable to protect the display of the frequency of switchback by password because the frequency of switchback of the screen saver is being counted and display of the frequency of switchback is allowed by entering password.

[0022] <Embodiment 3> This embodiment 3 is an embodiment that photos those who switched back the screen saver. FIG. 2 is a processing flow chart of this embodiment 3.

[0023] Similar to aforementioned embodiment 1, when the display 15 is at the condition of an original screen (Step 201), as there are neither pointing device 11 nor keyboard 12 etc. detected from input device within the designated time of screen saver (Step 202), a control device 20 switches the screen of the display 15 to the screen saver screen (Step 203).

[0024] Control device 20 detects that there is an input from the input device of the pointing device 11 or keyboard 12 etc. after the screen saver is activated (Step 204), it instructs the screen saver screen of a display 15 to switch to an original screen. And, filming device 13 films the operator who switch backs the screen saver screen to the original screen (Step 205), and stores filmed footage and filmed time timed with timer 17 in storage device 18 (Step 206).

[0025] The filmed footage is restored and reproduced through restoration/ reproduction device 14 (Step 207). The combining device 19 combines the filmed footage that is restored and reproduced, original screen and filmed time (Step 208), and overlaps the original screen to display on display 15 (Step 209). Next, the control device 20 deletes the filmed footage shown on the original screen from the display 15 by clearing the filmed footage and filmed time being displayed (Step 210).

[0026] Thus, in this embodiment 3, since the operator who switched back the screen saver is pictured, it enables a determination of who saw the original screen by filming and storing the operator even when the screen saver is switched back to the original screen against a user's intention.

[0027]

[Effect of the Invention] According to the present invention as explained above, whether the screen saver improperly switched to an original screen and was seen by persons other than a user can be determined by counting the frequency of switchback of a screen saver. Further, a person who saw the original screen can be easily determined by photographing the person who switches a screen saver back to an original screen.

[Brief Description of the Drawing]

[FIG. 1] is processing flow charts of the embodiments 1 and 2.

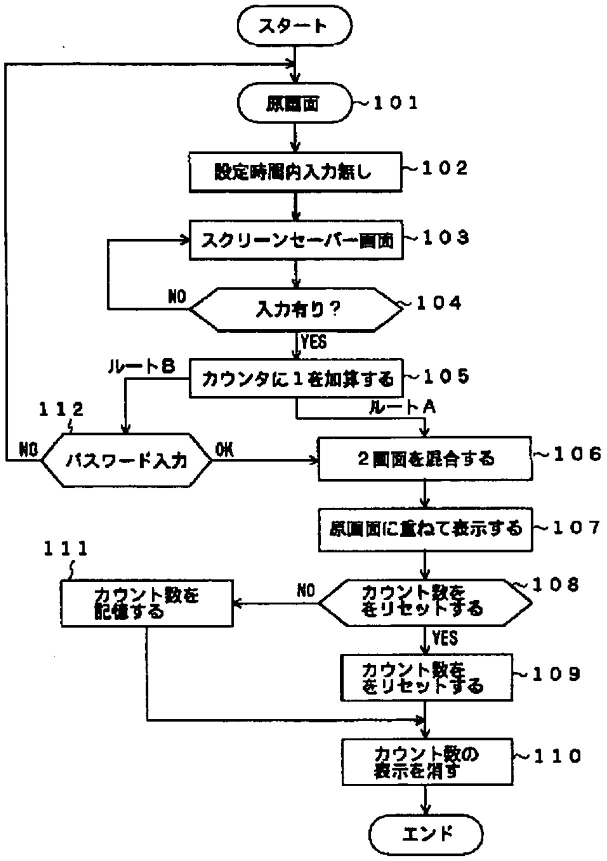
[FIG. 2] is a processing flow chart of the embodiment 3.

[FIG. 3] is a configuration of the embodiment in the present invention.

[Description of Notations]

10 Information processing device
11 Pointing device
12 Keyboard
* 13 Photographing device
14 Restoration/ reproducing device
15 Display
16 Counter
17 Timer
18 Storage device
19 Combining device
* 20 Control device

FIG. 1


スタート
原画面
101
設定時間内入力無し
102
スクリーンセーバー画面
103
入力有り？
104
NO
YES
カウンタに１を加算する
105
ルートB
ルートA
112
パスワード入力
NO
OK
2画面を混合する
106
原画面に重ねて表示する
107
111
カウント数を記憶する
NO
カウント数をリセットする
108
YES
カウント数をリセットする
109
カウント数の表示を消す
110
エンド

Start

101 Original screen

102 No input within the designated time

103 Screen saver screen

104 Is there an input?

105 Add 1 to the count

106 Combine two screens

107 Display on top of the original screen

108 Reset the number of counts

109 Reset the number of counts

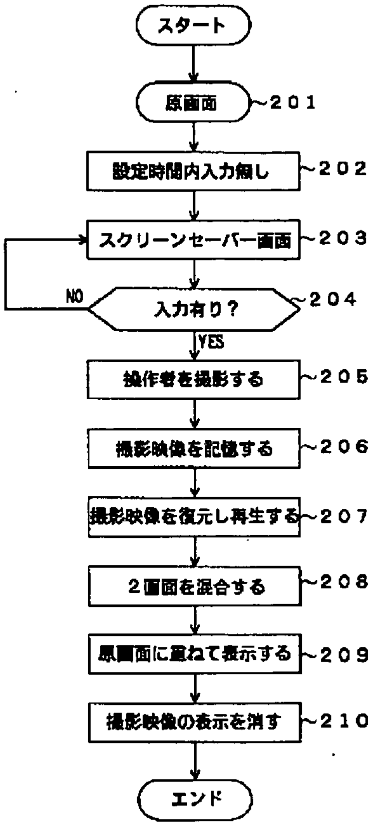
110 Reset the number of counts

111 Record the number of counts

112 Enter password

End

FIG. 2



スタート
原画面
201
設定時間内入力無し
202
スクリーンセーバー画面
203
NO
入力有り？
204
YES
操作者を撮影する
205
撮影映像を記憶する
206
撮影映像を復元し再生する
207
２画面を混合する
208
原画面に重ねて表示する
209
撮影映像の表示を消す
210
エンド

Start

201 Original screen

202 No input within the designated time

203 Screen saver screen

204 Is there an input?

205 Film an operator

206 Store picture

207 Regenerate and play filmed footage

208 Combine two screens

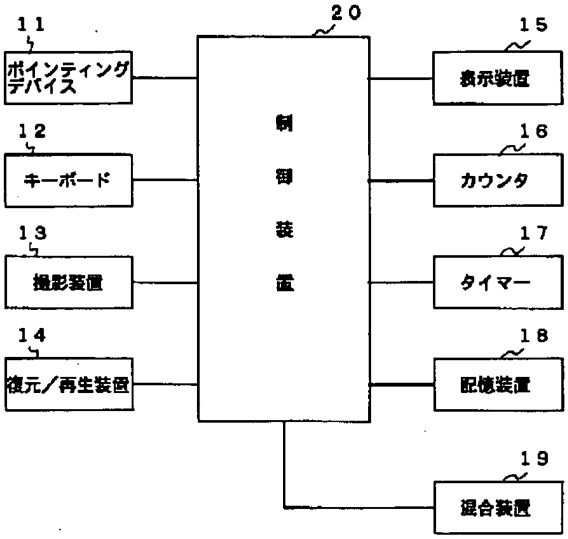
209 Display on top of an original screen

210 Delete the display of filmed footage

End

FIG. 3

Information processing device 10


11
ポインティングデバイス
12
キーボード
13
撮影装置
14
復元／再生装置
20
制御装置
15
表示装置
16
カウンタ
17
タイマー
18
記憶装置
19
混合装置

11 Pointing device

12 Keyboard

13 Photographing device

14 Regenerating/reproducing device

15 Display

16 Counter

17 Timer

18 Storage device

19 Combining device

20 Control device

CERTIFICATE OF TRANSLATION

I, Mayu Suzuki, a qualified translator fluent in Japanese and English working on be half of Oblon, Spivak, McClelland, Maier & Neustadt, LLP, hereby declare that to the best of my knowledge, the attached documents in English are true and accurate translations of I) Japanese Patent Publication No. JP08070300; and 2) the Japanese Patent Publication No. JP09305155.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Mayu Suzuki
Translator
Oblon, Spivak, McClelland, Maier & Neustadt, LLP
1940 Duke Street
Alexandria, VA 22314
(703) 412-5929 (Direct Dial)

11·25·2009
Date